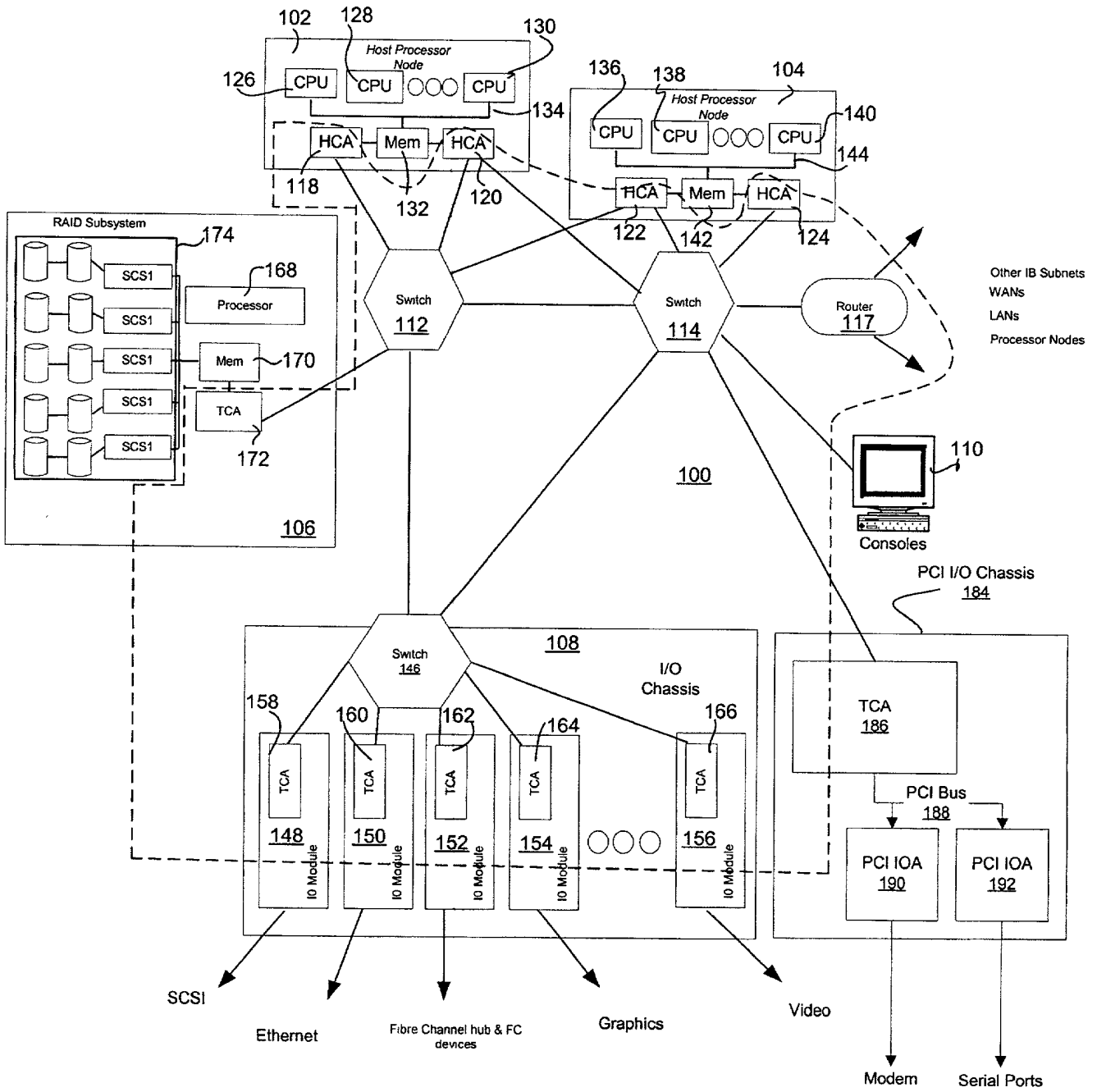
ET 530801627US

Figure 1

Craddock et al.
AUS920010491US1
End Node Partitioning Using Virtualization



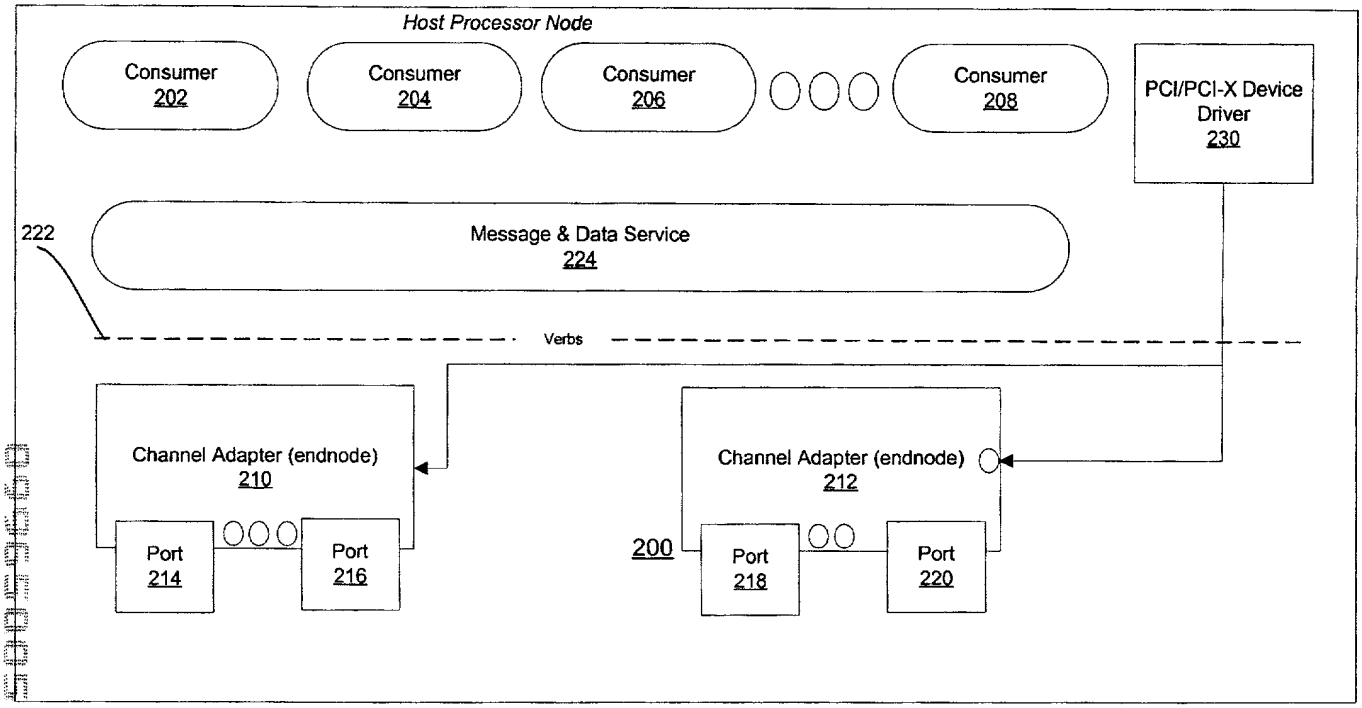

Host Processor Node
Consumer 202
Consumer 204
Consumer 206
Consumer 208
PCI/PCI-X Device Driver 230
222
Message & Data Service 224
Verbs
Channel Adapter (endnode) 210
Port 214
Port 216
Channel Adapter (endnode) 212
200
Port 218
Port 220

Figure 2

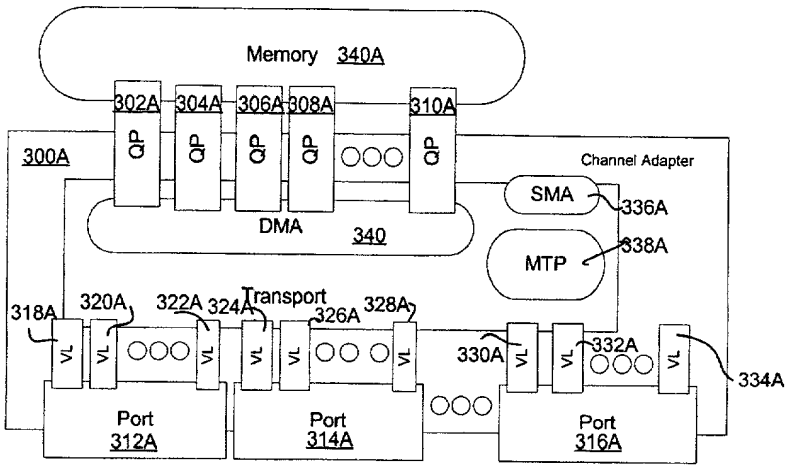


Figure 3A

9950.005.05 - 9950.005.04

Figure 3B

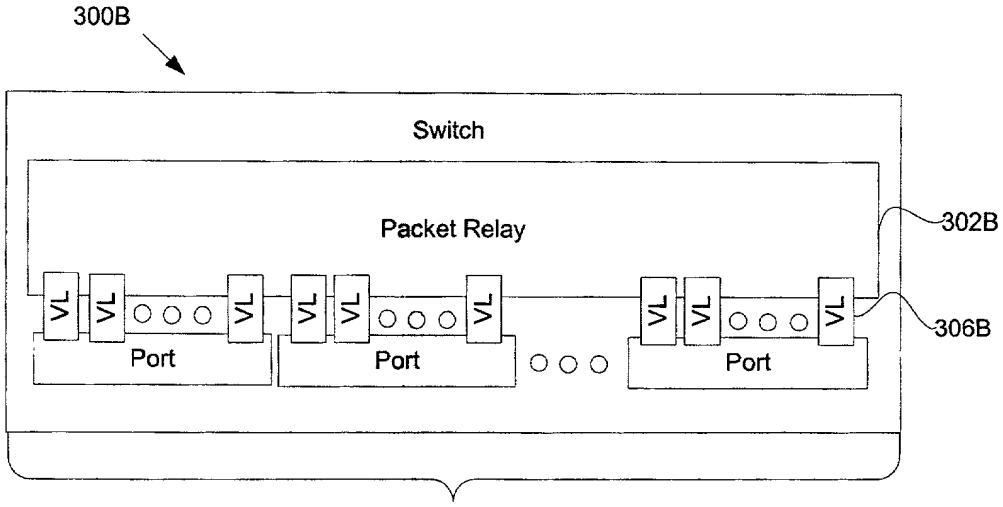


Figure 3C

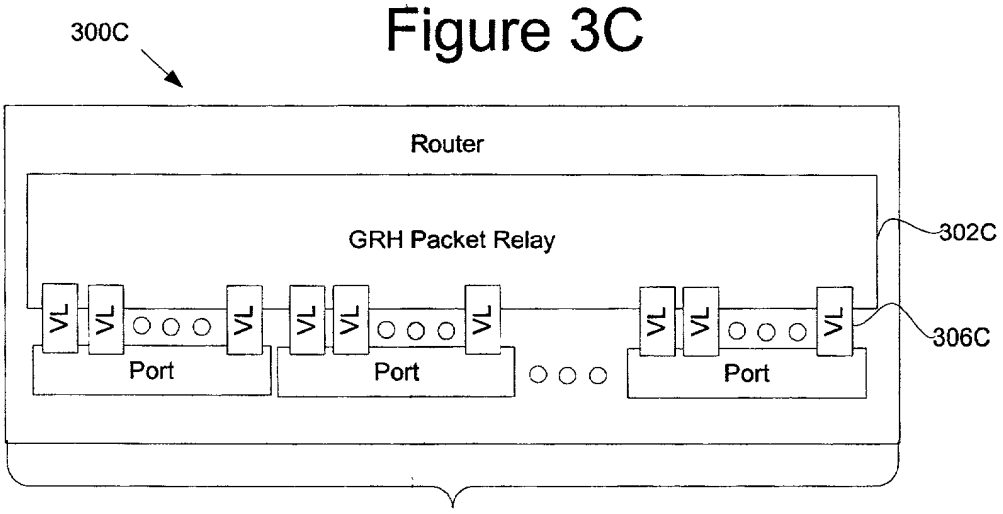


FIG 3C - 3B - 5C - 6C - 7C - 8C

Figure 4

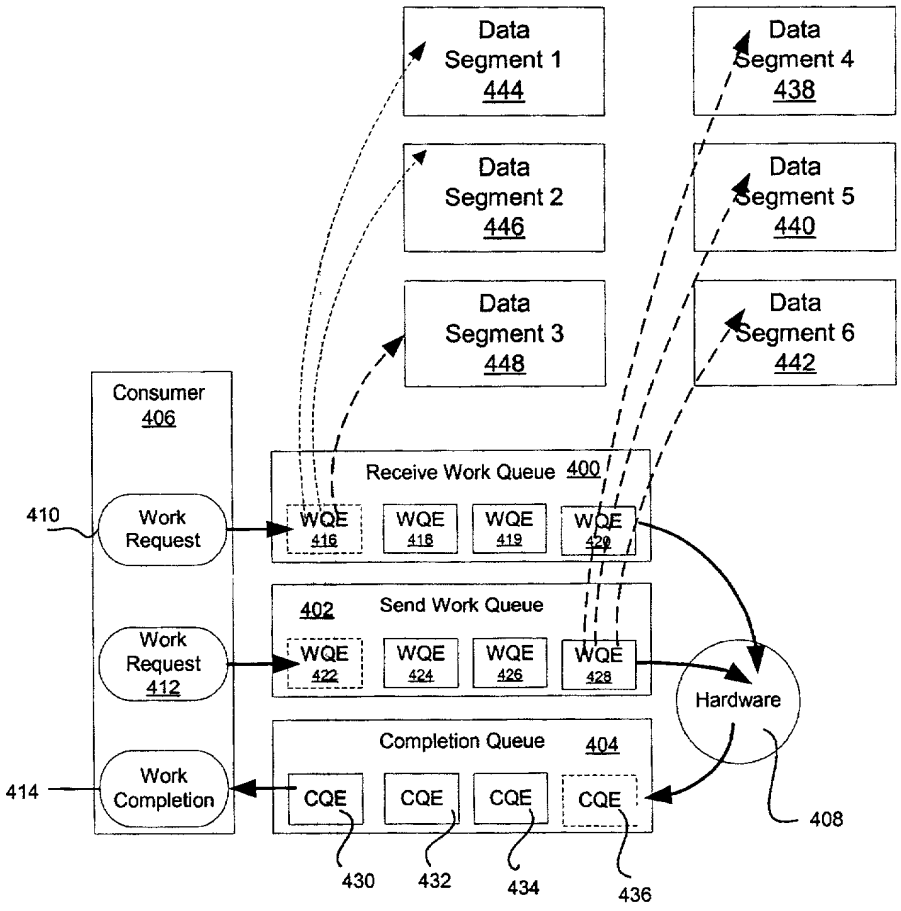

Data Segment 1 444
Data Segment 2 446
Data Segment 3 448
Data Segment 4 438
Data Segment 5 440
Data Segment 6 442
Consumer 406
Work Request 410
Work Request 412
Work Completion 414
Receive Work Queue 400
WQE 416
WQE 418
WQE 419
WQE 420
402 Send Work Queue
WQE 422
WQE 424
WQE 426
WQE 428
Completion Queue 404
CQE
CQE
CQE
CQE
Hardware 408
430
432
434
436

Figure 5

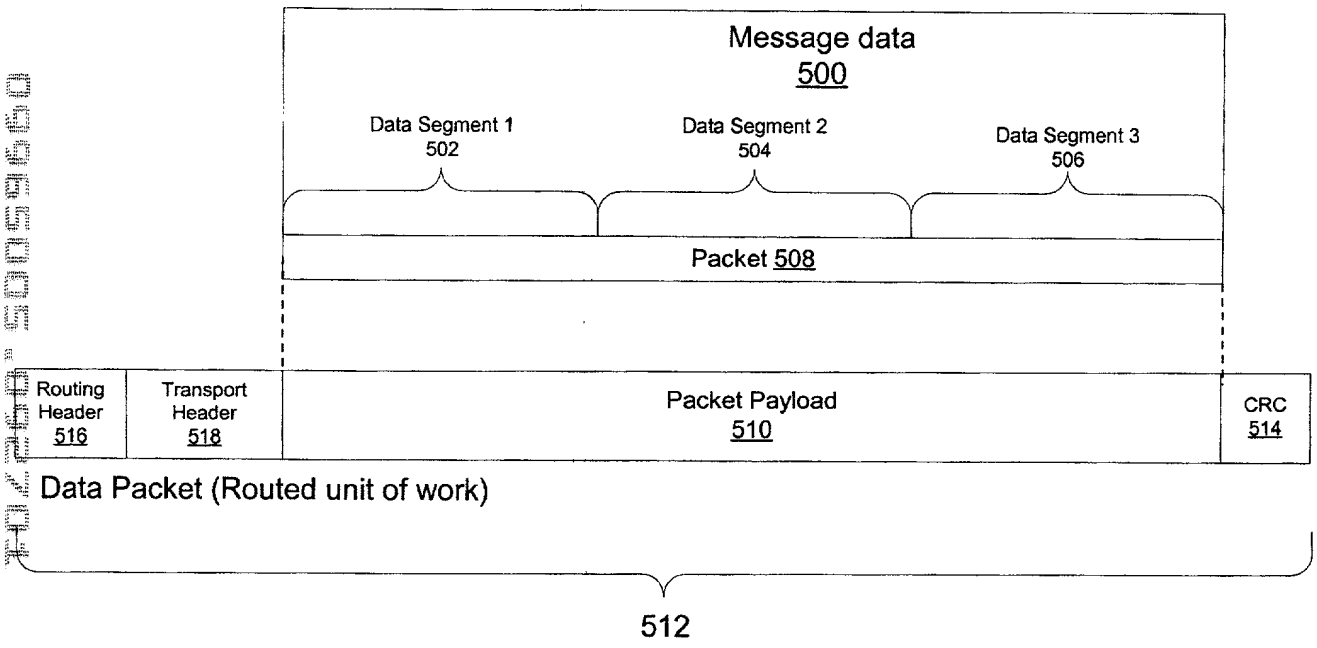
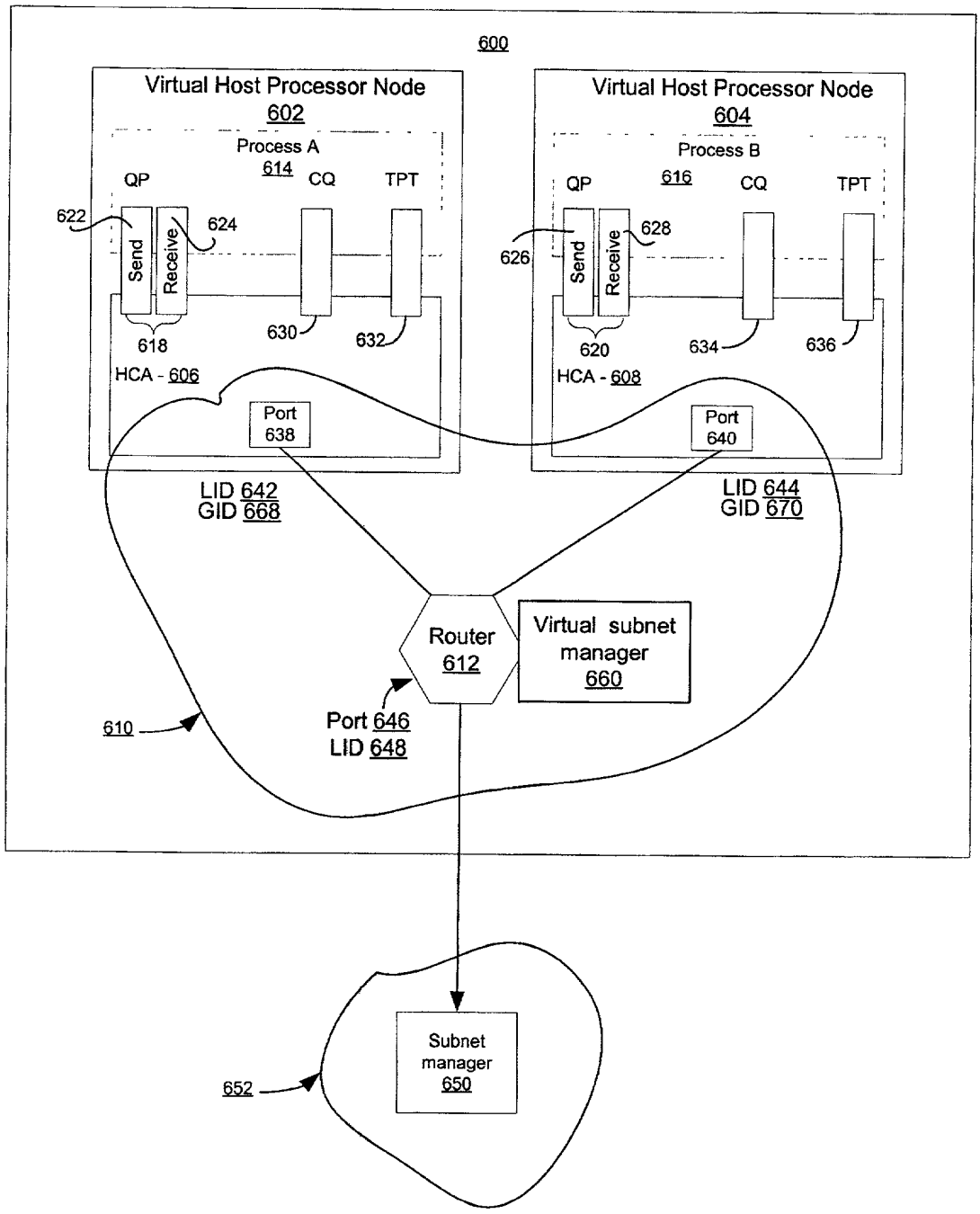

Message data
500
Data Segment 1
502
Data Segment 2
504
Data Segment 3
506
Packet 508
Routing Header 516
Transport Header 518
Packet Payload 510
CRC 514
Data Packet (Routed unit of work)
512

Figure 6


600
Virtual Host Processor Node
602
Process A
614
QP
CQ
TPT
622
Send
Receive
624
618
630
632
HCA - 606
Port
638
LID 642
GID 668
Virtual Host Processor Node
604
Process B
616
QP
CQ
TPT
626
Send
Receive
628
620
634
636
HCA - 608
Port
640
LID 644
GID 670
Router
612
Virtual subnet
manager
660
610
Port 646
LID 648
Subnet
manager
650
652

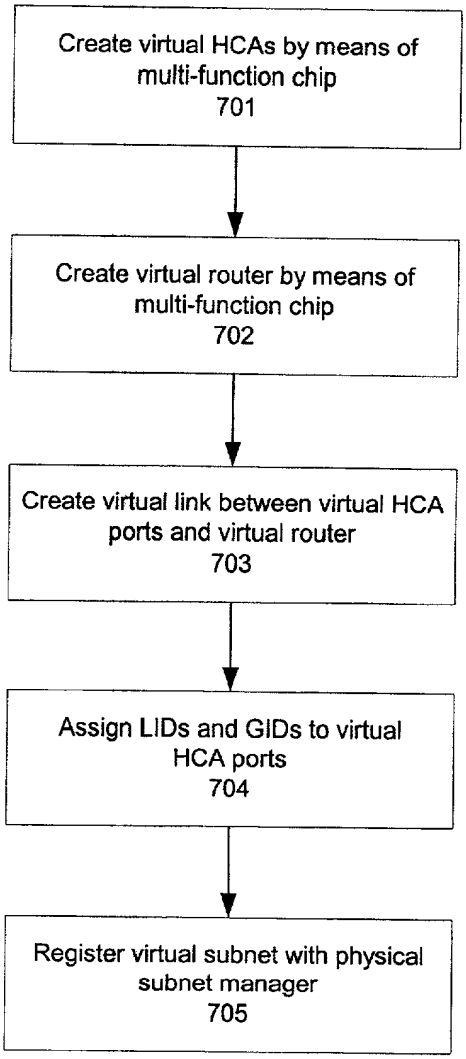

Create virtual HCAs by means of multi-function chip
701
Create virtual router by means of multi-function chip
702
Create virtual link between virtual HCA ports and virtual router
703
Assign LIDs and GIDs to virtual HCA ports
704
Register virtual subnet with physical subnet manager
705

Figure 7